

Abstract

A drive mechanism for delivery of infusion medium a coil capable of being electrically activated to provide an electromagnetic field. The coil surrounds a piston channel extending in an axial direction. The piston channel provides a passage for communication of infusion medium to an outlet chamber located at one end of the piston channel. An armature is located adjacent the coil, on one side of the axial channel. The armature is moveable toward a forward position, in response to the electromagnetic field produced by activation of the coil. A piston is located within the piston channel and is moveable axially within the channel to a forward position, in response to movement of the armature to its forward position. The armature and piston are moved toward a retracted position, when the coil is not energized. In the retracted position of the piston, a piston chamber is formed between the piston and a valve member and is filled with infusion medium. As the piston is moved to its forward position, the piston chamber volume is reduced and pressure within the piston chamber increases to a point where the pressure moves the valve member into an open position. When the valve member is in the open position, medium from the piston chamber is discharged into an outlet chamber located on the opposite side of the coil relative to the armature. An outlet is provided in flow communication with the outlet chamber, for discharging infusion medium from the outlet chamber.